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FINNEGAN, HENDERSON, FARABOW, GARRETT &  
DUNNER LLP  
1300 I STREET, NW  
WASHINGTON, DC 20006

EXAMINER

STORM, DONALD L

ART UNIT	PAPER NUMBER
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2654

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3

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

09/459,380

Applicant(s)

HUBOI, PETER ALLEN



Examiner

Donald L. Storm

Art Unit

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 December 1999.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Informalities*

1. Claim 15 is objected to under 37 CFR 1.75(a) because the meaning of the phrase “the call” needs clarification. Because no call was previously recited, it is unclear as to what element this phrase is making reference. To further timely prosecution and evaluate prior art, the Examiner has interpreted this phrase to refer to --the received voice information--; in some sense, that defines the call.

2. Claim 26 is objected to under 37 CFR 1.75(a) because it does not end with a period. Each claim begins with a capital letter and ends with a period to avoid undue confusion in determining if the claim is complete. Appropriate correction is required. See MPEP § 608.01(m).

3. Claim 28 is objected to for the same reasons as claim 15 because the limitations are recited using obviously similar phrases.

4. The Examiner notes, without objection, the possibility of informalities in the claims. The Applicant may wish to consider changes during normal review and revision of the disclosure.

In claim 30, line 5, should the word “predetermine” be --predetermined--?

### *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

McDonough

6. Claims 1, 4-5, 8-10, 13-17, 22-23, 28-30, 32, 35-37, 39-41, 43, 44, and 46-50 are rejected under 35 U.S.C. 102(b) as being anticipated by McDonough et al. [US Patent 5,625,748].

7. Regarding claim 1, McDonough describes the claimed limitations as a whole recognizable to one versed in the art as the embodiment for processing untranscribed speech comprising:

voice representations and voice messages [at column 6, lines 23-29, as untranscribed speech data];

storing voice, corresponding to a word or phrase [at column 2, lines 1-17, as training words to the vocabulary];

storing actions [at column 2, lines 14-17, as create a new node associating an action with a word];

receive a voice message [at column 1, lines 53-54, as provide an input speech message];

analyze the voice message to determine if a stored voice representation occurs in the message [at column 5, lines 43-50, as process a spoken message to produce a signal for the potential speech events in the spoken data];

perform actions if the stored voice representations are found in the voice message [at column 2, lines 1-8, as route the message according to the action associated with the word].

8. Claim 4 is set forth including the limitations of claim 1. McDonough describes those limitations as indicated there. McDonough also describes additional limitations as follows:

the user specifying words or phrases [at column 12, lines 11-13, as keywords selected by an operator];

storing a voice representation of each user specified word or phrase [at column 2, lines 1-17, as training words to the vocabulary];

the user specified words or phrases are included in analyzing the voice message [at column 12, lines 1-27, as keywords selected by the user are modeled in the event detector].

9. Claim 5 is set forth including the limitations of claim 1. McDonough describes those limitations as indicated there. McDonough also describes additional limitations as follows:

the user specifying actions to be performed if the voice representation is found in the voice message [at column 2, lines 1-24, as the user specifies the correctness of the action associated with the word to route the message according to the action associated with the word];

storing the user specified actions [at column 2, lines 1-24, as the user specifies the correctness of the action to create a new node associating an action with a word];

the user specified actions are included in performing the stored actions [at column 2, lines 1-24, as route the message according to the action associated with the word for which the user specifies the correctness of the action associated with the word].

10. Claim 8 is set forth including the limitations of claim 1. McDonough describes and make obvious those limitations as indicated there. Because McDonough's embodiments are directed equally to either processing of phone calls or processing of stored messages, McDonough describes:

forwarding the voice message [at column 12, lines 36-41, as routing a phone call based on the message, where the message is forwarded in the embodiment processing a stored message].

11. Claim 9 is set forth including the limitations of claim 1. McDonough describes and make obvious those limitations as indicated there. Because McDonough's embodiments are directed equally to either processing of phone calls or processing of stored messages, McDonough describes:

the voice message is received over a telephone line [at column 2, line 19, as speech over the telephone].

12. Regarding claim 10, McDonough describes the claimed limitations as a whole recognizable to one versed in the art as the embodiment for processing untranscribed speech, comprising:

voice representations and voice information from a person [at column 6, lines 23-29, as untranscribed speech data, where at column 2, lines 25-26, the user speaks naturally];

storing voice, corresponding to a word or phrase [at column 2, lines 1-17, as training words to the vocabulary];

storing actions [at column 2, lines 14-17, as create a new node associating an action with a word];

receive voice information from a person over a communications line [at column 2, lines 18-19, as conversational speech over the telephone];

analyze the voice information from the person to determine if a stored voice representation occurs in the voice information [at column 12, lines 28-41, as sort speech data from phone calls or incoming voice messages for automatic detection of speech data of interest];

perform actions if the voice information includes a stored voice representation [at column 12, lines 28-41, as respond to, route, or classify the phone call or incoming voice message using the sorting for detection of speech data of interest].

13. Claim 13 is set forth including the limitations of claim 10 and with additional limitations similar to limitations set forth in claim 4. McDonough describes the limitations as indicated there.

14. Claim 14 is set forth including the limitations of claim 10 and with additional limitations similar to limitations set forth in claim 5. McDonough describes the limitations as indicated there.

15. Claim 15 is set forth including the limitations of claim 10. McDonough describes those limitations as indicated there. McDonough also describes additional limitations when considered with certain assumptions that clarify claim informalities under 37 CFR 1.75(a), as follows:

compiling statistics on the call (received voice information, assumed) [at column 7, lines 46-47, as compute the scoring statistic given the data in the message].

16. Claim 16 is set forth including the limitations of claim 10 and with additional limitations already described there.

17. Claims 17 and 22 are set forth with limitations similar to claims 1 and 9. McDonough describes the limitations as indicated there. McDonough also describes additional limitations as follows:

a storage device for storing the parameters associated with the claimed functionality [at column 12, line 2, as the internal structure of the event detector, for the example at column 2, lines 1-9, the word nodes and action nodes];

a processor for accomplishing the claimed functionality [at column 5, lines 45-46, as a speech event frequency detector].

18. Claims 23, 28, and 29 are set forth with limitations similar to claims 10, 15, and 9. McDonough describes the limitations as indicated there. McDonough also describes additional limitations as follows:

a storage device for storing the parameters associated with the claimed functionality [at column 12, line 2, as the internal structure of the event detector, for the example at column 2, lines 1-9, the word nodes and action nodes];

a processor for accomplishing the claimed functionality [at column 5, lines 45-46, as a speech event frequency detector].

19. Claim 30 and claims 32, 35, and 36 are set forth with limitations similar to claim 1 and with limitations similar to limitations set forth in claims 5, 8, and 9. McDonough describes the limitations as indicated there, where a stored voice representation is a predetermined pattern of speech.

20. Claim 37 and claims 39 and 40 are set forth with limitations similar to claim 10 and with limitations similar to limitations set forth in claims 14 and 16. McDonough describes the limitations as indicated there, where a stored voice representation is a predetermined pattern of speech.

21. Claim 41 and claim 43 are set forth with limitations similar to limitations set forth in claim 17 and claim 22. McDonough describes the limitations as indicated there, where a stored voice representation is a predetermined pattern of speech.

22. Claim 44 and claim 46 are set forth with limitations similar to limitations set forth in claim 23 and claim 22. McDonough describes the limitations as indicated there, where a stored voice representation is a predetermined pattern of speech.

23. Claim 47 is set forth with limitations similar to limitations set forth in claim 17. McDonough describes the limitations as indicated there, where the storage device and the processor are the means for storing, means for receiving, and means for analyzing.

24. Claim 48 is set forth with limitations similar to limitations set forth in claim 23. McDonough describes the limitations as indicated there, where the storage device and the processor are the means for storing, means for receiving, and means for analyzing.

25. Claim 49 is set forth with limitations similar to limitations set forth in claims 30 and 47. McDonough describes the limitations as indicated there.

26. Claim 50 is set forth with limitations similar to limitations set forth in claims 37 and 48.

McDonough describes the limitations as indicated there.

***Claim Rejections - 35 USC § 103***

27. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***McDonough and Furui***

28. Claims 2, 11, 18, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDonough et al. [US Patent 5,625,748] in view of Sadaoki Furui, "Digital Speech Processing, Synthesis, and Recognition," Marcel Dekker, Inc., New York, 1989, pp. 225-289.

29. Claim 2 is set forth including the limitations of claim 1. McDonough describes those limitations as indicated there. McDonough [at column 7, lines 26-48] also describes phonetic wordspotting for the preferred embodiments.

Furui describes:

a voice message [at page 226, lines 19-22, as speech waveforms];

each stored voice representation is a phoneme representation of a word or phrase [at page 244, lines 1-4, as reference templates use phonemes concatenates to represent words].

Although, McDonough describes phonetic wordspotting, McDonough does not explicitly describe phoneme models.

To the extent that McDonough's stored voice representations of words are not innately phoneme representations, it would have been obvious to one of ordinary skill in the art of speech recognition at the time of invention to include Furui's phoneme based lexicon for wordspotting as McDonough's trained vocabulary, because McDonough points out phonetic wordspotting as preferred.

30. Claim 11 is set forth including the limitations of claim 10 and with additional limitations similar to limitations set forth in claim 2. McDonough and Furui describe and make obvious the limitations as indicated there.

31. Claim 18 is set forth including the limitations of claim 17 and with additional limitations similar to limitations set forth in claim 2. McDonough and Furui describe and make obvious the limitations as indicated there.

32. Claim 24 is set forth including the limitations of claim 23 and with additional limitations similar to limitations set forth in claim 2. McDonough and Furui describe and make obvious the limitations as indicated there.

**McDonough and Furui and Epstein**

33. Claims 3, 12, 19, 25, 31, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDonough et al. [US Patent 5,625,748] in view of Sadaoki Furui, "Digital Speech Processing, Synthesis, and Recognition," Marcel Dekker, Inc., New York, 1989, pp. 225-289 and further in view of Epstein et al. [US Patent 6,327,343].

34. Claim 3 is set forth including the limitations of claims 1-2. McDonough and Furui describe and make obvious those limitations as indicated there. McDonough [at column 11, lines 9-11] also describes implementing algorithms in the C programming language for computing.

McDonough and Furui, however, do not explicitly describe digital conversion of analog signals.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein describes:

a voice message [at column 8, lines 33-35, as stored audio data];

converting the analog voice message from analog to digital [at column 7, lines 1-5, as convert the analog data, such as an analog recorder, into digital data]; and

processing the digitized voice message [at column 9, lines 40-67, as convert voice data].

To the extent that McDonough's data is not innately digitized for the suggested computer algorithms, it would have been obvious to one of ordinary skill in the art of speech processing at the time of invention to include Epstein's analog to digital conversion for McDonough's data or Furui's data because the digital data could be processed on general purpose digital computers or programmable digital signal processors.

For the digital data then, Furui describes:

processing the voice message into phonemes [at page 244, lines 8-28, as short periods of input speech with phoneme-template structure are compared to phoneme reference templates to represent each word by concatenation of phonemes]; and

comparing the phonemes from the voice message with stored voice representations [at page 244, lines 42-44, as match the same phoneme positions between the input speech and reference templates].

35. Claim 12 is set forth including the limitations of claims 10-11 and with additional limitations similar to limitations set forth in claim 3. McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

36. Claim 19 is set forth including the limitations of claims 17-18 and with additional limitations similar to limitations set forth in claim 3. McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there. Epstein also describes further limitations as follows:

an analog to digital converter [at column 7, lines 1-5, as an analog-to-digital converter].

37. Claim 25 is set forth including the limitations of claims 23-24 and with additional limitations similar to limitations set forth in claim 12. McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there. Epstein also describes further limitations as follows:

an analog to digital converter [at column 7, lines 1-5, as an analog-to-digital converter].

38. Claim 31 is set forth including the limitations of claim 30 and with additional limitations similar to limitations set forth in claim 3. McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

39. Claim 38 is set forth including the limitations of claim 37 and with additional limitations similar to limitations set forth in claim 12. McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

**McDonough and Epstein**

40. Claims 6-7, 20-21, 26-27, 33-34, 42, 45, and 51-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDonough et al. [US Patent 5,625,748] in view of Epstein et al. [US Patent 6,327,343].

41. Claim 6 is set forth including the limitations of claim 1. McDonough describes and make obvious those limitations as indicated there. McDonough [at column 12, lines 40-41] also describes classifying stored voice messages.

McDonough, however, does not explicitly describe classifying the message as urgent.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein describes:

marking the message as urgent [at column 17, line 40, as adding an urgency stamp].

Although McDonough describes classifying message, McDonough's does not enumerate any particular classifications. In view of Epstein's labeling a message as urgent, it would have been obvious to one of ordinary skill in the art of message handling at the time of invention to include Epstein's concept of marking as urgent as a classification for McDonough's messages because that would have enabled signaling the addressee that an urgent message is available.

42. Claim 7 is set forth including the limitations of claim 1. McDonough describes and make obvious those limitations as indicated there. McDonough [at column 12, lines 36-41] also describes routing a phone call based on the message.

McDonough, however, does not explicitly describe calling a pager.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein describes:

calling a pager [at column 4, lines 1-3, as transmit a message to the user's pager].

Although McDonough describes routing calls and messages, McDonough does not enumerate any particular terminal type for receiving the message. In view of Epstein's transmission to a pager, it would have been obvious to one of ordinary skill in the art of message handling at the time of invention to include Epstein's ability to call a pager for McDonough's messages because that would have enabled signaling the addressee when the user is not at home or is out of the office, as Epstein describes [at column 14, lines 47-48].

43. Claim 20 is set forth including the limitations of claim 17 and with additional limitations similar to limitations set forth in claim 4. McDonough describes the limitations as indicated there. McDonough [at column 2, lines 17-28] receives input from the user for establishing user selection of words and actions.

McDonough, however, does not explicitly describe an interface between the user and the speech event frequency detector.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein also describes:

a user interface [at column 6, lines 7-13, as a programming interface].

Although McDonough describes receiving input from the user, McDonough does not explicitly describe any means to accept this input. Because McDonough describes user input, it would have been obvious to one of ordinary skill in the art of processing devices at the time of invention to include Epstein's concept of a programming interface with McDonough because that would provide the means for the user to provide the input to train McDonough's neural network to the words and actions.

44. Claim 21 is set forth including the limitations of claim 17 and with additional limitations similar to limitations set forth in claim 5. McDonough describes the limitations as indicated there. McDonough [at column 2, lines 17-28] receives input from the user for establishing user selection of words and actions.

McDonough, however, does not explicitly describe an interface between the user and the speech event frequency detector.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein also describes:

a user interface [at column 6, lines 7-13, as a programming interface].

Although McDonough describes receiving input from the user, McDonough does not explicitly describe any means to accept this input. Because McDonough describes user input, it would have been obvious to one of ordinary skill in the art of processing devices at the time of invention to include Epstein's concept of a programming interface with McDonough because that would provide the means for the user to provide the input to train McDonough's neural network to the words and actions.

45. Claim 26 is set forth including the limitations of claim 23 and with additional limitations similar to limitations set forth in claims 13 and 20. McDonough and Epstein describe and make obvious the limitations as indicated there.

46. Claim 27 is set forth including the limitations of claim 23 and with additional limitations similar to limitations set forth in claims 14 and 21. McDonough and Epstein describe and make obvious the limitations as indicated there.

47. Claims 33 and 34 are set forth including the limitations of claim 30 and with additional limitations similar to limitations set forth in claims 6 and 7. McDonough and Epstein describe and make obvious the limitations as indicated there.

48. Claim 42 is set forth including the limitations of claim 41 and with additional limitations similar to limitations set forth in claim 21. McDonough and Epstein describe and make obvious the limitations as indicated there.

49. Claim 45 is set forth including the limitations of claim 44 and with additional limitations similar to limitations set forth in claim 27. McDonough and Epstein describe and make obvious the limitations as indicated there.

50. Claim 51 is set forth with limitations similar to limitations set forth in claim 17. McDonough describes the limitations as indicated there. McDonough [at column 5, lines 45-46] also describes a processor for accomplishing the claimed functionality.

McDonough, however, does not explicitly describe that the speech event frequency detector is computer-implemented and with computer-readable contents.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein describes:

a computer readable medium whose contents cause the computer to perform the procedure [at column 4, lines 4-30, as associated memory for software implemented on a computer to accomplish the functionality].

To the extent that McDonough's system does not implicitly contain typical computer hardware and software, it would have been obvious to one of ordinary skill in the art of implementing functional descriptions of operations at the time of invention to include Epstein's concept of computer implementations by software loaded in computer-readable memory to achieve McDonough's speech processing functionality because that would have provided the best implementation under particular circumstances identified and evaluated by a skilled artisan. For example, it is within the ordinary skill of an artisan to determine that software elements, such as Epstein's concept, benefits changing processing functions or adding other processing functions because software elements are more easily modified than hardware elements.

51. Claim 52 is set forth with limitations similar to limitations set forth in claim 23 and with additional limitations similar to limitations set forth in claim 51. McDonough and Epstein describe and make obvious the limitations as indicated there.

52. Claim 53 is set forth with limitations similar to limitations set forth in claim 30 and with additional limitations similar to limitations set forth in claim 51. McDonough and Epstein describe and make obvious the limitations as indicated there.

53. Claim 54 is set forth with limitations similar to limitations set forth in claim 37 and with additional limitations similar to limitations set forth in claim 51. McDonough and Epstein describe and make obvious the limitations as indicated there.

### *Conclusion*

54. The following references made of record and not relied upon are considered pertinent to applicant's disclosure:

Theis [US Patent 4,982,420] describes an analog system that recognizes particular words in messages from a user responding to prompts and categorizes and prioritizes the messages.

McAllister et al. [US Patent 5,553,119] describes a distributed system and multiple speech recognition engines to categorize and route a call based on recognizing preselected words and on voice characteristics.

Gainsboro [US Patent 6,064,963] describes performing actions in response to words identified in telephone calls and recordings by automatic speech recognition and statistical analyses of the calls.

55. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703)872-9314, (for formal communications intended for entry)

**Or:**

(703)872-9314, (for informal or draft communications, and please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

56. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L. Storm, of Art Unit 2654, whose telephone number is (703)305-3941. The examiner can normally be reached on weekdays between 8:00 AM and 4:30 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (703)305-4379. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office at telephone number (703)306-0377.



Donald L. Storm  
Patent Examiner  
Art Unit 2654

November 18, 2002